What I claim is:

1. A composition of a fiber reinforced laminate material of a multi-layered laminate having two or more layers, wherein following heating using a compression molding or thermoforming process the laminate material forms a composite having a Class-A surface that is resin rich, said laminate material comprising:

a) a layer comprised of a thermoplastic resin;

b) a layer comprised of a polymerizable component comprised of chemically reactive components;

c) a layer of reinforcing fibers.

wherein the layer of reinforcing fibers is sufficiently open as to be permeable to impregnation / saturation by the thermoplastic resin and to enable the migration of the chemically reactive components, when the laminate is under heat and compression; and

wherein at the temperatures of molding the polymerizable component has a lower viscosity than the thermoplastic.

2. A composition of a fiber reinforced laminate material according to claim 1, wherein the layer of thermoplastic resin further comprises a polymerization agent.

3. The composition of a fiber reinforced laminate material, as claimed in claim 2, wherein the polymerization agent is selected from the group consisting of initiators, accelerators, cross-linkers, catalysts, drying agents or a combination thereof.

4. The composition of a fiber reinforced laminate material, as claimed in claim 1, wherein the chemically reactive components are selected from the group consisting of low molecular weight polymers, macrocyclic oligomers, linear oligomers, prepolymers, monomers,

cyclic esters, dimers, trimers, tetramers and the like, or any combination thereof.

5. A composition of a fiber reinforced laminate material, according to claim 1, wherein the layer of chemically reactive components is further comprised of a thermoplastic polymer.

6. The composition of a fiber reinforced laminate material, as claimed in claim 5, wherein the chemically reactive components are selected from the group consisting of low molecular weight polymers, oligomers, prepolymers, monomers, dimers, trimers, tetramers and the like, and any combination thereof.

7. The composition of a fiber reinforced laminate material, as claimed in claim 1, wherein the reinforced fiber layer is comprised of fibers selected from the group consisting of glass fibers, metal fibers, ceramic fibers, carbon fibers, aramid fibers, synthetic polymers made from polymers such as polyester, polypropylene, polyamides, polyimides, and polyurethanes, and blends and combinations thereof.

8. The composition of a fiber reinforced laminate material, as claimed in claim 7, wherein the reinforced fiber layer is comprised of fibers that are long, short, chopped, matted, picked, bonded, woven, and other wised processed to facilitate handling, saturation, cost, strength and orientation.

9. The composition of a fiber reinforced laminate material, as claimed in claim 1, wherein the reinforced fiber layer is a glass mat.

10. The composition of a fiber reinforced laminate material, as claimed in claim 1, wherein the thermoplastic resin is selected from the group consisting of polyolefins; polyesters, polyurethanes, polyacrylates, copolymers, terpolymers ionomers of copolymers.

11. The composition of a fiber reinforced laminate material, as claimed in claim 10, wherein the thermoplastic polyolefin resin is selected from the group consisting of polypropylenes, ethylene propylene copolymers, ethylene propylene diene monomer, TPCs and TPEs.

12. A composition of a fiber reinforced laminate material according to claim 1, wherein the layer of thermoplastic resin further comprises other additives selected from the group consisting of reinforcing fibers, extenders which are fillers, antioxidants, UV stabilizers, thermal stabilizers, flame retardants, fillers which are reinforcing, glass beads, colorants, antimicrobial agents, dyes, pigments, plasticizers, oils, impact modifiers, processing aides (i.e. waxes, fluorinated compounds, silicone compounds, surfactants, polymeric processing aides), density modifiers such as phenolic beads, desiccants, buffers, and IR absorbent compounds to facilitate heating (i.e. carbon blacks, graphite, metal oxides).

13. A composition of a fiber reinforced laminate material according to claim 1, wherein the layer of polymerizable components further comprises other additives selected from the group consisting of reinforcing fibers, extenders which are fillers, antioxidants, UV stabilizers, thermal stabilizers, flame retardants, fillers which are reinforcing, glass beads, colorants, antimicrobial agents, dyes, pigments, plasticizers, oils, impact modifiers, processing aides (i.e. waxes, fluorinated compounds, silicone compounds, surfactants, polymeric processing aides), density modifiers such as phenolic beads, desiccants, buffers, and IR absorbent compounds to facilitate heating (i.e. carbon blacks, graphite, metal oxides).

14. A composition of a fiber reinforced laminate material according to claim 1, wherein the layer of reinforcing fibers comprises other additives selected from the group consisting of extenders which are fillers, antioxidants, UV stabilizers, thermal stabilizers, flame retardants, fillers which are reinforcing, glass beads, colorants, antimicrobial agents, dyes, pigments, plasticizers, oils, impact modifiers, density modifiers such as phenolic beads, desiccants, buffers,

and IR absorbent compounds to facilitate heating (i.e. carbon blacks, graphite, metal oxides).

15. A method for forming a fiber reinforced laminate material of a multi-layered laminate having three or more layers, wherein following heated compression molding, said composite has a Class-A surface that is resin rich, said method comprising the steps of:

a) extruding an intra-layer of polymerizable components between a first layer of reinforcing fibers and a second layer of reinforcing fibers;

b) essentially simultaneously extruding an first layer of thermoplastic resin on an outer side of the first layer of reinforcing fibers and a second layer of thermoplastic resin on an outer side of the second layer of reinforcing fibers; and,

c) laminating the first layer of thermoplastic resin, the first layer of reinforcing fibers, the intra-layer of polymerizable components, the second layer of reinforcing fibers and the second layer of thermoplastic resin; and

d) cooling the laminate, therein forming the fiber reinforced laminate material.

16. A method for forming a fiber reinforced laminate material according to claim 15, wherein the layer of thermoplastic resin further comprises a polymerization agent.

17. The method for forming a fiber reinforced laminate material as claimed in claim 15, wherein the wherein the polymerization agent is selected from the group consisting of initiators, accelerators, cross-linkers, catalysts, drying agents or a combination thereof.

18. The method for forming a fiber reinforced laminate material as claimed in claim 15, wherein the layer of polymerizable components is comprised of chemically reactive components selected from the group consisting of low molecular weight polymers, oligomers, prepolymers, monomers, dimers, trimers, tetramers and the like, and any combination thereof.

19. The method for forming a fiber reinforced laminate material as claimed in claim 18, wherein the polymerizable component is further comprised of a thermoplastic polymer.

20. The method for forming a fiber reinforced laminate material as claimed in claim 15, wherein the first layer of reinforcing fiber is a glass mat, and the second layer of reinforcing fiber is also a glass mat, wherein the glass mat is selected for its appropriate application in a GMT composite.

21. The method for forming a fiber reinforced laminate material as claimed in claim 15, wherein the thermoplastic resin selected from the group consisting of polyolefins, polyesters, polyurethanes, polyacrylates, copolymers, terpolymers ionomers of copolymers.

22. The method for forming a fiber reinforced laminate material as claimed in claim 21, wherein the polyester resin is selected from the group consisting of polycarbonate, polyethylene terephthalate, polybutylene terephthalate or blends thereof.

23. The method for forming a fiber reinforced laminate material according to claim 15, wherein the layer of thermoplastic resin further comprises other additives selected from the group consisting of reinforcing fibers, extenders which are fillers, antioxidants, UV stabilizers, thermal stabilizers, flame retardants, fillers which are reinforcing, glass beads, colorants, antimicrobial agents, dyes, pigments, plasticizers, oils, impact modifiers, processing aides (i.e. waxes, fluorinated compounds, silicone compounds, surfactants, polymeric processing aides), density modifiers such as phenolic beads, desiccants, buffers, and IR absorbent compounds to facilitate heating (i.e. carbon blacks, graphite, metal oxides).

24. The method for forming a fiber reinforced laminate material according to claim 15, wherein the layer of polymerizable components comprises other additives selected from the group consisting of reinforcing fibers, extenders which are fillers, antioxidants, UV stabilizers,

thermal stabilizers, flame retardants, fillers which are reinforcing, glass beads, colorants, antimicrobial agents, dyes, pigments, plasticizers, oils, impact modifiers, processing aides (i.e. waxes, fluorinated compounds, silicone compounds, surfactants, polymeric processing aides), density modifiers such as phenolic beads, desiccants, buffers, and IR absorbent compounds to facilitate heating (i.e. carbon blacks, graphite, metal oxides).

25. The method for forming a fiber reinforced laminate material according to claim 15, wherein the layer of reinforcing fibers comprises other additives selected from the group consisting of extenders which are fillers, antioxidants, UV stabilizers, thermal stabilizers, flame retardants, fillers which are reinforcing, glass beads, colorants, antimicrobial agents, dyes, pigments, plasticizers, oils, impact modifiers, density modifiers such as phenolic beads, desiccants, buffers, and IR absorbent compounds to facilitate heating (i.e. carbon blacks, graphite, metal oxides).

26. The composition of a fiber reinforced laminate material, as claimed in claim 10, wherein the polyester resin is selected from the group consisting of polycarbonate, polyethylene terephthalate, polybutylene terephthalate or blends thereof.

27. The composition of a fiber reinforced laminate material as claimed in claim 1, wherein on exposure to heat and pressure a portion of the chemically reactive components are forced to the surface of the fiber reinforced laminate material, therein the reactive components polymerize forming a Class-A surface, that is substantially fiber free.

28. The method for forming a fiber reinforced laminate material according to claim 15, wherein on exposure to heat and pressure a portion of the chemically reactive components are forced to the surface of the fiber reinforced laminate material, therein the reactive components polymerize forming a Class-A surface that is substantially fiber free, and wherein the

thermoplastic resin thoroughly permeates the reinforcing fiber forming a composite having a core with a nearly uniform mixture of reinforced fiber and thermoplastic resin.

29. The composition of a fiber reinforced laminate material, as claimed in claim 2, wherein the thermoplastic resin is polycarbonate.

30. The composition of a fiber reinforced laminate material, as claimed in claim 2, wherein the polymerization agent is a transesterification catalyst.

31. The composition of a fiber reinforced laminate material, as claimed in claim 30, wherein the transesterification catalyst is a titanate ester.

32. The composition of a fiber reinforced laminate material, as claimed in claim 31, wherein the titanate ester is isopropyl triethanolaminatotitanate.

33. The composition of a fiber reinforced laminate material, as claimed in claim 4, wherein the macrocyclic oligomers is a macrocyclic oligoester.

34. The composition of a fiber reinforced laminate material, as claimed in claim 33, wherein the macrocyclic oligoester is selected from the group consisting of 1,4-butylene terephthalate (CBT), 1,3-propylene terephthalate (CPT), 1,4-cyclohexylenedimethylene terephthalate (CCT), ethylene terephthalate (CET), 1,2-ethylene 2,6-naphthalenedicarboxylate (CEN), macrocyclic oligoesters of polyethylene isophthalate, sulfonated polyethylene isophthalate, sulfonated polyalkylene terephthalate, sulfonated polyalkylene naphthenate, and sulfonated polyalkylene isophthalate.

35. The composition of a fiber reinforced laminate material, as claimed in claim 34, wherein the preferred macrocyclic oligoester is 1,4-butylene terephthalate (CBT).

36. The composition of a fiber reinforced laminate material, as claimed in claim 1, wherein one of the chemically reactive components is a thermoplastic resin is polycarbonate.

37. The composition of a fiber reinforced laminate material, as claimed in claim 36, wherein the polycarbonate comprises greater 50% of the weight of the polymerizable component layer.

38. The composition of a fiber reinforced laminate material, as claimed in claim 2, wherein the thermoplastic resin has a MFI greater than 5.

39. The composition of a fiber reinforced laminate material, as claimed in claim 34, wherein the macrocyclic oligoester has a repeating structural unit of 3 –20 units.

40. The composition of a fiber reinforced laminate material, as claimed in claim 30, wherein the transesterification catalyst is admixed with the thermoplastic resin.

41. The composition of a fiber reinforced laminate material, as claimed in claim 40, wherein the weight percentage of transesterification catalyst in the layer of thermoplastic resin is less than 1%.

42. The composition of a fiber reinforced laminate material, as claimed in claim 40, wherein the weight percentage of glass fiber of the weight of the composite material is 15% to 35%.